Gulf Research Reports, Vol. 6, No. 1, 69–70

SHORT COMMUNICATIONS

NOTES ON SARCOPHAGIDS FROM THE NEW HOST *ROMALEA MICROPTERA*, AND FROM *TERRAPENE CAROLINA CAROLINA*

ADRIAN R. LAWLER
Parasitology Section, Gulf Coast Research Laboratory, Ocean Springs, Mississippi 39564

ABSTRACT Sarcophagid fly larvae are reported from the new host *Romalea microptera* (Palisot de Beauvois), a lubber grasshopper. A new locality record is given for *Cistudinomyia cistudinis* (Aldrich).

Sarcophagid fly larvae parasitize a wide range of invertebrates and vertebrates (Aldrich 1916; Greene 1925; James 1947; Zumpt 1965). The sarcophagids reported herein were recovered from *Romalea microptera* (Palisot de Beauvois), a lubber grasshopper, and *Terrapene carolina carolina* (Linnaeus), the eastern or common box turtle.

One third-instar (8.5 mm long) larval sarcophagid was recovered from the hemocoel of a *Romalea microptera* collected on the Gulf Coast Research Laboratory grounds on 18 November 1971. Four puparia (8.0, 8.5, 9.0, 9.5 mm long) were found in the hemocoel of another *R. microptera* from lab grounds on 5 September 1974. It is not known if the puparia represent the same species as the larva as larvae must be reared to adults to ensure correct specific identification. Two of fourteen (14%) grasshoppers examined were infected (Table 1), both hosts being females. All sarcophagids plus one example of the host were deposited in the U. S. National Museum.

The third instar proved to be quite hardy; it remained alive in 70% ethanol for 20 minutes, then in AFA for about one hour, finally being killed by hot AFA. The four puparia appeared to be alive when removed, and were held on moist filter paper from 5–17 September in order to see if they would hatch. As they did not hatch, they were preserved.

Aldrich (1916) and Greene (1925) listed several sarcophagids that occur in grasshoppers; however, a review of the literature revealed no prior listing of *R. microptera* as a host. Also, Richard H. Foote (personal communication) noted that the USDA had "...no records of any sarcophagids from *Romalea*."

A sarcophagid was removed from a large lesion on the left rear leg of an eastern box turtle (*Terrapene carolina carolina*) collected near Gloucester Point, Virginia, by Kenneth W. Able on 16 September 1970. The larva was killed in boiling water, preserved in ethanol, and sent to W. W. Becklund, who identified it as *Cistudinomyia cistudinis* (Aldrich). It is deposited under USDA Par. Coll. 66098.

Aldrich (1916) noted that Packard (1882), Wheeler (1890), Emerton (1904), and Kepner (1912) had reported unidentified sarcophagid larvae from box turtles. True (1884) also reported an unidentified sarcophagid from a turtle. Verified reports of *C. cistudinis* are listed in Table 2. Further information on this species was presented by Knipling (1937).

Appreciation is expressed to Richard H. Foote, Chief, Systematic Entomology Laboratory, USDA; R. J. Gagne, A. B. Gurney, and Reece I. Sailer, Entomology Research Division, USDA; and to the late W. W. Becklund, Veterinary Sciences Research Division, USDA.

TABLE 1.

Romalea microptera examined for sarcophagids at Ocean Springs, Mississippi.

Date Collected	Body Length (mm)	Sex	No. Sarcophagids
18 Nov 1971	64	F	1
29 Nov 1971	58	F	0
10 Jul 1974	58	F	0
5 Sep 1974	58	F	4
13 Sep 1974	63	F	0
13 Sep 1974	45	M	0
16 Sep 1974	56	F	0
17 Sep 1975	58	F	0
25 Sep 1975	45	M	0
17 Oct 1975	44	M	0
17 Oct 1975	48	M	0
21 Sep 1976	60	F	0
5 Oct 1976	64	F	0
6 Oct 1976	62	F	0

TABLE 2.

Reports of *Cistudinomyia cistudinis* (Aldrich).

Host	State	Author
Chrysemys picta	New Jersey	Chidester (1915)
Box turtle	New Jersey	Aldrich (1916)
Terrapene carolina	New Jersey	Greene (1925)
Gopherus polyphemus	Florida, Georgia, Mississippi	Knipling (1937)
Terrapene sp.	Florida	Knipling (1937)
Testudo sp.	Texas (in a zoo)	Knipling (1937)
Terrapene carolina bauri	Illinois (in a zoo)	Rokosky (1948)
Terrapene carolina	Florida	King & Griffo (1958)
Terrapene carolina carolina	Virginia	Present report

LITERATURE CITED

Aldrich, J. M. 1916. *Sarcophaga and Allies in North America.* The Thomas Say Foundation of the Entomological Society of America, La Fayette, Indiana, 302 pp.

Chidester, F. E. 1915. Sarcophagid larvae from the painted turtle. *J. Parasitol.* 2(1):48–49.

Emerton, J. H. 1904. A dipterous parasite of the box turtle. *Psyche* 11:34.

Greene, C. T. 1925. The puparia and larvae of sarcophagid flies. *Proc. U. S. Nat. Mus.* 66(2566):1–26.

James, M. T. 1947. The flies that cause myiasis in man. *U. S. Dept. Agr., Misc. Publ.* No. 631, 175 pp.

Kepner, W. A. 1912. The larva of *Sarcophaga,* a parasite of *Cistudo carolina,* and the histology of its respiratory apparatus. *Biol. Bull.* 22:163–172.

King, W. & J. V. Griffo, Jr. 1958. A box turtle fatality apparently caused by *Sarcophaga cistudinis* larvae. *The Fla. Entom.* 41(1):44.

Knipling, E. F. 1937. The biology of *Sarcophaga cistudinis* Aldrich (Diptera), a species of Sarcophagidae parasitic on turtles and tortoises. *Proc. Entom. Soc. Wash.* 39(5):91–101.

Packard, A. S. 1882. Bot fly maggots in a turtle's neck. *Entomology Notes. Amer. Nat.* 16:598.

Rokosky, E. J. 1948. A bot-fly parasitic in box turtles. *Nat. Hist. Misc., Chicago Acad. Sci.,* No. 32, 2 pp.

True, F. W. 1884. Bot-flies in a turtle. *Science* 4:511.

Wheeler, W. M. 1890. The supposed bot-fly parasite of the box turtle. *Psyche* 5:403.

Zumpt, F. 1965. *Myiasis in Man and Animals in the Old World.* Butterworth & Co. Ltd., London, 267 pp.